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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/655,985

09/05/2003

Guoming G. Zhu

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8945

7590

01/17/2006

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EXAMINER

NGHIEM, MICHAEL P

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/655,985

Applicant(s)

ZHU ET AL.

Examiner

Michael P. Nghiem

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9, 11-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-9 and 11-14 is/are allowed.
- 6) ☒ Claim(s) 16, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 17 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment filed on November 8, 2005 has been acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels et al. (US 2004/0083794) in view of Deutsch et al. (US 5,054,461).

Regarding claim 18, Daniels et al. discloses an open secondary winding detection apparatus (Fig. 24), comprising:

- an integrator (245) having an ionization signal input (output from 240), an enable input (integration window input), a reset input (reset input) and an output (output from 245);

- a comparator (260) having a first input (input from 250) operably connected to said output of said integrator (Fig. 24), a second input (255) operably connected to a threshold value (Fig. 24), and an output (output from 260).

Art Unit: 2863

Regarding claim 16, Daniels et al. discloses an open secondary detection enable flag signal (integration window) operably connected to said enable input of said integrator (Fig. 24).

Regarding claim 19, Daniels et al. discloses that said ionization signal input of said integrator is operably connected to an ionization current measuring circuit (paragraph 0078, lines 1-7).

However, Daniels et al. does not disclose that said reset input of said integrator is operably connected to an ignition charge pulse.

Nevertheless, Deutsch et al. discloses a reset input (column 4, lines 10-12) of an integrator (42) is operably connected to an ignition charge pulse (via resistor 56 and capacitor 58 combination) for the purpose of filtering undesired high frequency components (column 4, lines 12-13).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Daniels et al. with a reset input as disclosed by Deutsch et al. for the purpose of filtering high frequency components.

Allowable Subject Matter

Claims 17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-9 and 11-14 are allowed.

Reasons For Allowance

The combination or method as claimed wherein using a rising edge of an ignition charge pulse to reset said integrator (claims 3, 20) or comparing an ionization signal with a first threshold; measuring the spark duration when said ionization signal is greater than said first threshold; comparing said spark duration with a second threshold; and setting an open secondary flag (claim 11) or an arrangement of a controller and a timer between two comparators (claim 13) or a powertrain control module having an input operably connected to said output of said comparator and an output operably connected to said enable input of said integrator (claim 17) is not disclosed, suggested, or made obvious by the prior art of record.

Response to Arguments

Applicant's arguments filed on November 8, 2005 have been considered but are not persuasive.

With respect to the 35 USC 103 rejections, Applicants argue that the Deutsch reference does not teach a reset input as provided by claims 16, 18, and 19.

Examiner's position is that the "reset input" is not defined in claims 16, 18, and 19. In other words, what device or element does the "reset input" reset? Any one of inputs (44, 46, 48) is deemed to be a reset input because it can reset the output of comparator (62 compares 61 to output of 64, and depending on which signal is greater, the output of 62 is either set, i.e. 1, or reset, i.e. 0).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P Nghiem whose telephone number is (571) 272-2277. The examiner can normally be reached on M-H.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MICHAEL NGHIEM
PRIMARY EXAMINER**

Michael Nghiem

January 8, 2005